November 1993

Improvements In Process Efficiency

HWRIC Technology Update

Solvent Substitution Testing Program

Manufacturing process lines in many Illinois factories often include product cleaning steps prior to further treatment or use. With impending restrictions on organic solvent use mandated by the Clean Air Act Amendments of 1990 and the targeting of 17 priority chemicals by USEPA's 33/50 voluntary reduction program, manufacturers are examining alternative cleaners.

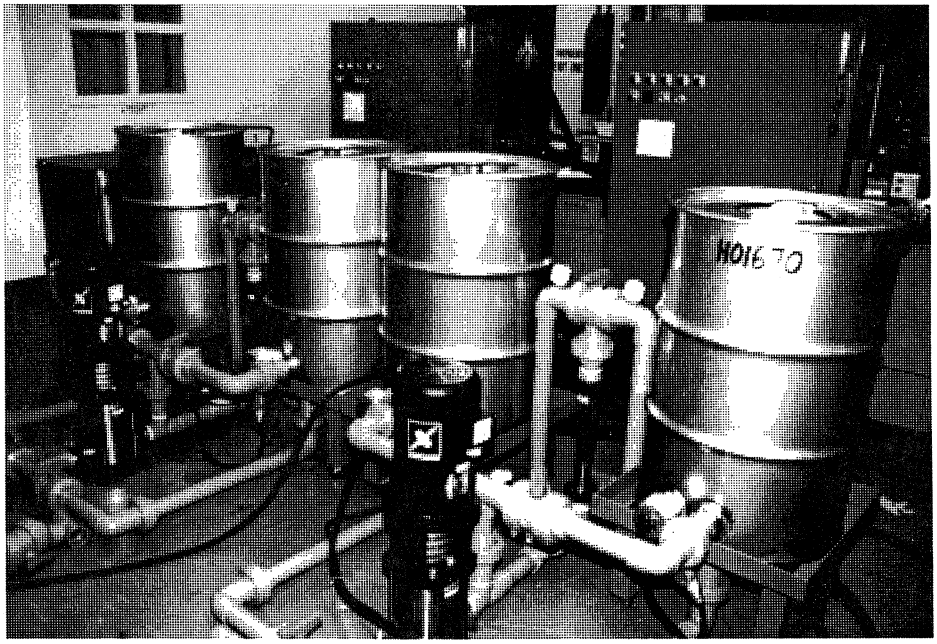
The Hazardous Waste Research and Information Center, through funding by USEPA, will investigate techniques and technologies designed to reduce or eliminate the use of organic solvents.

The project will provide a detailed, unbiased examination of available cleaning alternatives. HWRIC has designed a unique portable system to test a variety of cleaning products under a broad range of conditions. It will accommodate the testing of cleaning, rinsing, phosphating, and other treatment steps under varying temperatures, pressures, and concentrations. A variety of conditions specified by either the cleaning product manufacturer or a facility operations manager can be tested. The system can be used in HWRIC's pilot laboratory or at the industrial facility.

Industry participants will be sought on a voluntary basis in cooperation with the Illinois Department of Commerce and Community Affair's Small Business Environmental Assistance Program.

Results of the various trials will be distributed in a series of case study factsheets.

For additional information, contact Tim Lindsey, Joe Pickowitz or Jackie Peden at (217) 333-8940.



Objectives

- Minimize impacts of Clean Air Act and other regulations by finding suitable alternatives that are less toxic
- Provide an unbiased evaluation of process alternatives

Equipment Options

- Immersion, agitated
- Immersion, non-agitated
- Spray—multiple pressures and flows
- Ultrasonics
- Drying—blown air, compressed air, vacuum
- Cleaning may be accomplished at various temperatures, with or without deionized water

Chemical Options

- Aqueous chemicals
- Semi-aqueous chemicals

1 E. Hazelwood Drive, Champaign, IL 61820 (217) 333-8940 or 3333 Arthington, Chicago, IL 60624 (312) 265-2185